AMENDMENTS TO THE CLAIMS

1. **(Amended)** A system for producing power and pasteurizing wastewater ~~water~~, comprising:

a turbine configured to receive a flow of a working fluid, the working fluid flow configured to rotate blades and an output shaft of the turbine;

a power generator coupled to the turbine output shaft and configured to convert rotation of the output shaft into power;

a source of wastewater;

a heat exchanger having first and second internal chambers that are fluidly separate from one another inside the heat exchanger, the first chamber configured to receive working fluid exiting the turbine, the second chamber configured to receive wastewater from the source of wastewater ~~water~~, the chambers configured to permit heat exchange between working fluid within the first chamber and wastewater ~~water~~ within the second chamber to raise the temperature of wastewater ~~water~~ in the second chamber to at least a wastewater ~~water~~ pasteurization temperature; and

a heat source operatively connected to impart heat to working fluid flowing through the turbine and the first chamber of the heat exchanger.

2. **(Original)** The system of Claim 1, wherein the working fluid comprises air.

3. **(Amended)** The system of Claim 1, wherein the wastewater ~~water~~ pasteurization temperature is 150-170°F.

4. **(Amended)** The system of Claim 1, wherein the wastewater ~~water~~ pasteurization temperature is at least 160°F.

5. **(Amended)** The system of Claim 1, wherein the system is capable of pasteurizing at least 200,000 gallons of wastewater ~~water~~ per megawatt of power generated.

6. **(Amended)** The system of Claim 1, wherein the system is capable of pasteurizing at least 500,000 gallons of wastewater ~~water~~ per megawatt of power generated.

7. **(Original)** The system of Claim 1, wherein the system is configured so that the heat source imparts heat to working fluid upstream of and flowing into the turbine.

8. **(Original)** The system of Claim 1, wherein the system is configured so that the heat source imparts heat to working fluid downstream of and flowing out of the turbine.

9. **(Original)** The system of Claim 1, wherein the power generator is configured to convert rotation of the output shaft into electric power.

10. **(Original)** The system of Claim 1, wherein the heat source comprises a natural gas fuel source.

11. **(Original)** The system of Claim 10, wherein the natural gas fuel source is one selected from the group consisting of methane, propane, and butane.

12. **(Original)** The system of Claim 10, further comprising:

a gas compressor having an input and an output, the input of the gas compressor being connected to an output of the natural gas fuel source, the gas compressor configured to compress natural gas received from the natural gas fuel source and permit the compressed natural gas to flow through the output of the gas compressor; and

a natural gas ignition chamber having a natural gas input connected to the output of the gas compressor and a working fluid input configured to receive working fluid, the natural gas ignition chamber having an output connected to an input of the turbine, the natural gas ignition chamber including a natural gas igniter for igniting the natural gas fuel to impart heat to working fluid within the natural gas ignition chamber.

13. **(Original)** The system of Claim 12, wherein the natural gas igniter of the natural gas ignition chamber comprises one of an electric spark generator and a flame generator.

14. **(Original)** The system of Claim 12, further comprising an additional natural gas ignition chamber having a first input connected to the natural gas fuel source and a second input connected to an output of the turbine, the additional natural gas ignition chamber having an output connected to the first chamber of the heat exchanger, the additional natural gas ignition chamber including a natural gas igniter for igniting the natural gas fuel to impart heat to working fluid within the additional natural gas ignition chamber.

15. **(Original)** The system of Claim 14, wherein the additional natural gas ignition chamber comprises a ductburner.

16. **(Original)** The system of Claim 1, wherein the heat source comprises coal.

17. **(Original)** The system of Claim 1, wherein the heat source comprises nuclear energy.

18. **(Amended)** The system of Claim 1, wherein the heat exchanger is a second heat exchanger, the system further comprising a first heat exchanger having first and second

fluidly separate internal chambers, the chambers of the first heat exchanger being configured to permit heat exchange between wastewater ~~water~~ within the first chamber of the first heat exchanger and pasteurized wastewater ~~water~~ within the second chamber of the first heat exchanger, the first chamber of the first heat exchanger having an input configured to receive wastewater from the source of wastewater and an output connected to an input of the second chamber of the second heat exchanger, the second chamber of the first heat exchanger having an input connected to receive pasteurized wastewater ~~water~~ expelled from an output of the second chamber of the second heat exchanger, the second chamber of the first heat exchanger also having an output configured to expel pasteurized wastewater ~~water~~.

19. **(Original)** The system of Claim 1, wherein the first chamber of the heat exchanger has an input configured to receive working fluid exiting the turbine and an output configured to expel the working fluid into the environment.

20. **(Original)** The system of Claim 19, further comprising catalysts for cleaning working fluid within the first chamber of the heat exchanger so that the quality of the working fluid in the first chamber of the heat exchanger conforms to emissions standards.

21. **(Original)** The system of Claim 20, wherein the catalysts comprise one or both of CO and SCR.

22. **(Original)** The system of Claim 19, further comprising a continuous emissions monitoring system for monitoring the quality of working fluid expelled from the output of the first chamber of the heat exchanger.

23. **(Amended)** A system for producing electric power and pasteurizing wastewater ~~water~~, comprising:

a turbine power generator configured to convert a flow of working fluid into electric power; ~~and~~

a source of wastewater; and

a heat exchanger having first and second fluidly separate internal chambers, the first internal chamber configured to receive an exhaust flow of working fluid from the turbine generator, the second internal chamber configured to receive wastewater from the source of wastewater ~~water~~, the chambers configured to permit heat exchange between working fluid within the first chamber and wastewater ~~water~~ within the second chamber to pasteurize wastewater ~~water~~ within the second chamber.

24. **(Original)** The system of Claim 23, further comprising a heat source configured to impart heat to working fluid flowing into the turbine generator.

25. **(Amended)** A system for producing power and pasteurizing wastewater ~~water~~, comprising:

a turbine configured to receive a flow of a working fluid, the working fluid flow configured to rotate blades and an output shaft of the turbine;

a power generator coupled to the turbine output shaft and configured to convert rotation of the output shaft into power;

a source of wastewater;

a heat exchanger having first and second fluidly separate internal chambers, the first chamber configured to receive working fluid exiting the turbine, the second chamber configured to receive wastewater from the source of wastewater ~~water~~, the chambers configured to permit heat exchange between working fluid within the first chamber and wastewater ~~water~~ within the second chamber; and

a heat source configured to impart heat to working fluid flowing through the turbine and the first chamber of the heat exchanger.

26. **(Amended)** The system of Claim 25, wherein the heat source is configured to impart sufficient heat to the working fluid flowing through the turbine and the first chamber of the heat exchanger so that the working fluid is hot enough to raise the temperature of wastewater ~~water~~ flowing through the second chamber of the heat exchanger to at least a wastewater ~~water~~ pasteurization temperature.

27. **(Amended)** A system for producing electric power and pasteurizing wastewater ~~water~~, comprising:

a turbine power generator configured to convert a flow of working fluid into electric power; ~~and~~

a source of wastewater; and

a heat exchanger having first and second fluidly separate internal chambers, the first internal chamber configured to receive an exhaust flow of working fluid from the turbine generator, the second internal chamber configured to receive wastewater from the source of wastewater ~~water~~, the chambers configured to permit heat exchange between working fluid within the first chamber and wastewater ~~water~~ within the second chamber.

28. **(Amended)** A method of producing power and pasteurizing wastewater ~~water~~, comprising:

causing a working fluid to flow through a turbine power generator, the flow of working fluid causing the turbine power generator to generate power;

after the working fluid exits the turbine power generator, directing the working fluid into a first of two fluidly separate internal chambers of a heat exchanger, the chambers configured to permit heat exchange between the working fluid within the first chamber and wastewater ~~water~~ within a second of the two chambers, the working fluid within the first chamber being at a temperature greater than a wastewater ~~water~~ pasteurization temperature;

causing wastewater ~~water~~ to flow through the second chamber of the heat exchanger, the wastewater ~~water~~ initially being colder than the wastewater ~~water~~ pasteurization temperature;

permitting the wastewater ~~water~~ flowing through the second chamber to absorb heat from the working fluid within the first chamber; and

controlling the flow rate of the wastewater ~~water~~ flowing through the second chamber of the heat exchanger so that the wastewater ~~water~~ temperature rises to at least the wastewater pasteurization temperature and so that substantially all of the wastewater becomes pasteurized within the heat exchanger.

29. **(Original)** The method of Claim 28, further comprising heating the working fluid before it flows into the turbine power generator.

30. **(Original)** The method of Claim 29, wherein heating the working fluid comprises mixing the working fluid with ignited natural gas fuel.

31. **(Original)** The method of Claim 30, further comprising compressing the natural gas fuel inside a gas compressor prior to mixing the natural gas fuel with the working fluid.

32. **(Original)** The method of Claim 29, wherein heating the working fluid comprises causing the working fluid to absorb heat from burning coal.

33. **(Original)** The method of Claim 29, wherein heating the working fluid comprises causing the working fluid to absorb nuclear energy.

34. **(Original)** The method of Claim 28, further comprising heating the working fluid after it exits the turbine power generator and before it enters the first chamber of the heat exchanger.

35. **(Amended)** The method of Claim 28, wherein the heat exchanger is a second heat exchanger, and wherein causing wastewater ~~water~~ to flow through the second chamber of the second heat exchanger comprises:

causing unpasteurized wastewater ~~water~~ to flow through a first of two fluidly separate internal chambers of a first heat exchanger, the chambers of the first heat exchanger configured to permit heat exchange between the unpasteurized wastewater ~~water~~ within the first chamber of the first heat exchanger and pasteurized wastewater ~~water~~ within a second of the two chambers of the first heat exchanger;

permitting the unpasteurized wastewater ~~water~~ flowing through the first chamber of the first heat exchanger to absorb heat from pasteurized wastewater ~~water~~ within the second chamber of the first heat exchanger;

causing the unpasteurized wastewater ~~water~~ within the first chamber of the first heat exchanger to flow from the first heat exchanger into the second chamber of the second heat exchanger;

permitting the wastewater ~~water~~ within the second chamber of the second heat exchanger to absorb heat from the working fluid within the first chamber of the second heat exchanger, so that the wastewater ~~water~~ within the second chamber of the second heat exchanger is brought to the wastewater pasteurization temperature; and

causing the pasteurized wastewater ~~water at the pasteurization temperature~~ to exit the second chamber of the second heat exchanger and flow through the second chamber of the first heat exchanger.

36. **(Original)** The method of Claim 28, wherein the pasteurization temperature is 150-170°F.

37. **(Original)** The method of Claim 28, wherein the pasteurization temperature is at least 160°F.

38. **(Amended)** The method of Claim 28, further comprising causing the wastewater ~~water~~ flowing through the second chamber of the heat exchanger to remain at a temperature of at least 160°F for at least five seconds.

39. **(Amended)** The method of Claim 28, further comprising pasteurizing at least 200,000 gallons of wastewater ~~water~~ per megawatt of power generated.

40. **(Amended)** The method of Claim 28, further comprising pasteurizing at least 500,000 gallons of wastewater ~~water~~ per megawatt of power generated.

41. **(Amended)** The method of Claim 28, further comprising:

heating and oxidizing the wastewater ~~water~~ before it flows through the second chamber of the heat exchanger so that the wastewater ~~water~~ releases digester gas;

causing the digester gas to mix with the working fluid; and

igniting the digester gas in the presence of the working fluid so that the digester gas imparts heat to the working fluid.

42. **(Original)** The method of Claim 41, further comprising mixing the digester gas with natural gas prior to said step of causing the digester gas to mix with the working fluid.

43. **(Original)** The method of Claim 41, further comprising compressing the digester gas prior to said step of causing the digester gas to mix with the working fluid.

44. **(Amended)** A method of producing electric power and pasteurizing a liquid ~~water~~, comprising:

pumping air through a turbine power generator, the air causing the turbine power generator to generate electric power; and

after the air exits the turbine power generator, transferring heat from the air to liquid ~~water~~ to raise the liquid ~~water~~ temperature to at least a ~~water~~ pasteurization temperature of the liquid so that substantially all of the liquid becomes pasteurized.

45. **(New)** A method of producing electric power and pasteurizing wastewater, comprising:

pumping air through a turbine power generator, the air causing the turbine power generator to generate electric power; and

after the air exits the turbine power generator, transferring heat from the exiting air to wastewater without mixing the air with the wastewater, so that the wastewater becomes pasteurized.